

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

GENERAL ACCESS SOLUTIONS, LTD.,

Plaintiff,

v.

SPRINT SPECTRUM L.P., SPRINTCOM,
INC., AND ASSURANCE WIRELESS USA,
L.P.,

Defendants.

Case No. 2:20-cv-00007-RWS

DEFENDANTS' RESPONSIVE CLAIM CONSTRUCTION BRIEF

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Exhibit	Title
1	U.S. Patent No. 7,230,931
2	Preliminary Election of Asserted Claims
3	Webster's New World Dictionary of American English (1994)
4	Newton's Telecom Dictionary (2001)
5	U.S. Patent No. 6,094,421
6	U. Vornefeld et al., SDMA Techniques for Wireless ATM, IEEE Communications Magazine 52 (Nov. 1999)
7	ETSI, High Performance Radio Local Area Networks (HIPERLAN) (July 1997)
8	Patent Owner Response, IPR2017-01889, Paper 25
9	Declaration of Kurt Humphrey, IPR2017-01889
10	Petition for Inter Partes Review of U.S. Patent No. 7,230,931, IPR2017-01889
11	Excerpts from the Deposition of James Proctor (July 13, 2018), IPR2017-01889
12	Final Written Decision, IPR2017-01889, Paper 43

TABLE OF ABBREVIATIONS

Abbreviation	Term
Sprint	Defendants Sprint Spectrum L.P., SprintCom, Inc., and Assurance Wireless USA, L.P.
GAS	Plaintiff General Access Solutions, Ltd.
'931 patent	U.S. Patent No. 7,230,931
PTAB	Patent Trial and Appeal Board
IPR	Inter partes review
FWD	Final written decision

I. INTRODUCTION

GAS's claim construction brief reads as though the Federal Circuit never decided *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). GAS inverts the hierarchy of claim construction tools, privileging extrinsic evidence in general and general-purpose dictionaries in particular. *See* GAS Br. 9-11, 16, 22, 28; *but see Phillips*, 415 F.3d at 1322 (“a general-usage dictionary cannot overcome art-specific evidence of the meaning of a claim term”). It focuses heavily on tenuous inferences from the patent examiner’s actions during original prosecution while ignoring its own prosecution history disclaimer in IPR. *See* GAS Br. 10-12, 22-30; *but see Phillips*, 415 F.3d at 1317 (prosecution history “often lacks the clarity of the specification and thus is less useful for claim construction purposes”). And it thus gives short shrift to the language of the claims themselves and the specification, which is usually “dispositive” and should be “the single best guide to the meaning of a disputed term.” *Id.* at 1321. To make matters worse, GAS focuses its fire on a construction Sprint has not offered, for a claim term that is not in dispute.

Those errors cause GAS to ignore the most compelling evidence of the meaning of the asserted ‘931 patent claims. To take one example, GAS assails any requirement that the claimed “wireless access *network*” must be “fixed.” *See, e.g.*, GAS Br. 6, 11-14. But Sprint has not sought to construe the network itself as “fixed,” but only the separate claim limitation of “wireless access devices disposed at . . . subscriber premises” as “fixed.” And even though the specification identifies the need for such fixed access devices as a critical part of the claimed invention, GAS asks the Court to treat that language as mere surplusage to be “excised” freely. GAS Br. 8 n.1. GAS begs a similar misstep in seeking to excise the pre-programmed requirement that the specification imposes on the claimed directed scanning beam signals. Moreover, on this term, as well as “transmits/transmitting, in . . . said TDD frame,” GAS

improperly attempts to revoke the bargain it struck in IPR. Because only Sprint’s constructions are faithful to the entire intrinsic record, the Court should adopt them in full.

II. ARGUMENT

A. The preambles of Claims 1 and 19 are limiting.

Claim Term	Defendants’ Construction	Plaintiff’s Construction
Preambles	Preambles are limiting	Preambles are not limiting
Claims 1, 19		

The preambles of Claims 1 and 19 limit those claims, particularly (as relevant here) for the term “wireless access devices disposed at a plurality of subscriber premises.”¹ A preamble limits a claim when it is “necessary to give life, meaning, and vitality to the claim,” such as when (1) the specification highlights particular limitations recited in the preamble as important; or (2) limitations in the claim body rely on the preamble for antecedent basis. *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808-09 (Fed. Cir. 2002). Here, both of those “guideposts” confirm that the preambles of Claims 1 and 19 are limiting. *Id.* at 808.

1. The preambles recite structure that the specification highlights as important to the invention.

The preambles are limiting because their recital of “wireless access devices disposed at . . . subscriber premises” is “underscored as important by the specification.” *Id.; Poly-Am., LP v.*

¹ The preamble of claim 1 states: “For use in a wireless access network comprising a plurality of base stations, each of said plurality of base stations capable of bidirectional time division duplex (TDD) communication with wireless access devices disposed at a plurality of subscriber premises in an associated cell site of said wireless access network, a transceiver associated with a first of said plurality of base stations comprising”

The preamble of claim 19 similarly states: “For use in a wireless access network comprising a plurality of base stations, each of said plurality of base stations capable of bidirectional time division duplex (TDD) communication with wireless access devices disposed at a plurality of subscriber premises in an associated cell site of said wireless access network, a method of communicating with a first of said plurality of base stations comprising the steps of”

GSE Lining Tech., Inc., 383 F.3d 1303, 1310 (Fed. Cir. 2004) (preamble held limiting because it disclosed a “fundamental characteristic of the claimed invention”). GAS ignores the key role that wireless access devices disposed at subscriber premises play in the specification. GAS Br. 8-9.

The specification underscores the importance of “wireless access devices disposed at . . . subscriber premises” by framing them as part and parcel of the solution to a gap in the prior art. The problem was that “there is a need in the art for a fixed wireless access network that maximizes spectral efficiency between the base stations of the fixed wireless access network and *the subscriber access devices located at the subscriber premises.*” Ex. 1, ‘931 patent at 9:1-12.² The solution to that problem involves precisely the term used in the preamble: “To address the above-discussed deficiencies of the prior art, *it is a primary object of the present invention to provide a transceiver for use in a wireless access network comprising a plurality of base stations*” capable of “communication with *wireless access devices disposed at a plurality of subscriber premises* in a corresponding cell site of the wireless access network.” ‘931 patent at 9:16-34 (Summary of the Invention). *See Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1358 (Fed. Cir. 2012) (finding the preamble phrase “rotary cutter deck” limiting where the specification referred to “the present invention” as “a rotary cutter deck”). The specification thus underscores the importance of the “wireless access devices disposed at a plurality of subscriber premises” as a key link that “tethers the claims to the focus of the described invention.” *Luminati Networks Ltd. v. BIScience Inc.*, 2019 WL 6683268, at *7 (E.D. Tex. Dec. 7, 2019).

The specification repeatedly highlights this tethering term. The first sentence in the Abstract defines the base stations as capable of communicating “with wireless access devices

² Unless otherwise noted, all emphases are added.

disposed at a plurality of subscriber premises.” ‘931 patent at Abstract. The Background of the Invention describes access to “both commercial and residential subscriber premises,” utilizing transmissions “to fixed location antennas attached to the residences or offices of subscribers.” *Id.* at 4:19-21, 5:22-28. The “Summary of the Invention” uses the precise term repeated in the claim preambles to describe the invention. *Id.* at 9:16-34; *supra* at 3. And the Detailed Description of the Invention follows through by detailing a one and only embodiment involving transmissions to “subscriber premises,” which “transmit and receive via fixed, externally-mounted antennas.” *Id.* at 11:55-65; *see also id.* at 14:26-28 (describing communications with “subscriber integrated access devices”); *id.* at 22:52-57 (describing transmissions from “subscriber access devices”). The repetition of that concept in the preamble’s recitation of “wireless access devices disposed at a plurality of subscriber premises” is not, as GAS would maintain, an accident, but rather confirms that those preambles are limiting. *See, e.g., Mems Tech. Berhad v. ITC*, 447 F. App’x 142, 153–54 (Fed. Cir. 2011) (holding the preamble limiting because it states “the essence of the invention”).

This Court found an analogous preamble limiting for the same reasons in *realZOOM LLC v. L Brands, Inc.*, 2018 WL 2287613 (E.D. Tex. May 18, 2018). There, the preambles recited a method of zoom display involving a “client device configured to generate a user interface in which a user may control a position of a cursor.” *Id.* at *1-2. Although the claim bodies did not recite any user control limitation, *id.* at *14, the patent’s Background of the Invention section identified the problem in the prior art that “*users* typically do not have control over how an enlarged image is displayed,” *id.* And the specification generally “emphasize[d] the importance of user control over the enlarged image.” *Id.* This Court thus held that “the preambles are limiting because they recite the necessary user interface that provides user control.” *Id.*; *see also*

Gen. Elec. Co. v. Nintendo Co., 179 F.3d 1350, 1361–62 (Fed. Cir. 1999) (holding the preamble term “raster scanned display device” to be limiting because the specification focused on the prior art problem of displaying binary data on a raster scan display device). Because the specification likewise showcases “wireless access devices disposed at a plurality of subscriber premises,” the preambles to Claims 1 and 19 are limiting.

2. The preambles provide antecedent basis for and are necessary to understand claim terms.

The preambles also are limiting because they “provide antecedent basis for and are necessary to understand positive limitations in the body of the claims.” *Pacing Techs., LLC v. Garmin Int’l, Inc.*, 778 F.3d 1021, 1024 (Fed. Cir. 2015); *see also Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 953 (Fed. Cir. 2006) (“[B]ecause the preamble recites structural features of the [invention], it is apparent that the claim drafter chose to use both the preamble and the body of the claim to define the subject matter of the claimed invention.”).

The preamble to Claim 1 is limiting, for example, because it provides the antecedent basis for “said first base station,” ‘931 patent at 30:42-43, the key term that GAS ignores in its limiting preamble analysis. GAS Br. 7-8. The preamble recites not just any “base stations,” but “a plurality of base stations” that are defined by their “capab[ility] of bidirectional time division duplex (TDD) communication with wireless access devices disposed at a plurality of subscriber premises.” ‘931 patent at 30:31-35. The preamble then identifies “a first of said plurality of base stations” associated with a transceiver. *Id.* at 30:36-37. The rest of Claim 1 describes circuitry associated with “said first base station” sending TDD transmissions to “wireless access devices.” *Id.* at 30:44-52. In other words, the body of Claim 1 describes the base station performing the very steps that the preamble defines that base station as capable of performing. Because the preamble provides both the definition of and antecedent basis for “said first base

station,” it is “essential to understand limitations or terms in the claim body.” *Catalina*, 289 F.3d at 808. And because “wireless access devices disposed at a plurality of subscriber premises” is essential to that definition of “said first base station,” it too is a part of the limiting preamble.³

The preambles’ references to “wireless access devices disposed at a plurality of subscriber premises” remain limiting even if viewed in isolation. That is because in context, “wireless access devices disposed at a plurality of subscriber premises” is the only plausible antecedent for subsequent references to “wireless access devices” in Claims 1 and 19 and their dependent claims.⁴ *See, e.g.*, ‘931 patent at 30:40-41, 45, 50; 32:26, 32-33. Nothing in those claims suggests a reference to “wireless access devices” that are *not* disposed at subscriber premises, and nothing in the specification suggests the invention involves anything but “wireless access devices disposed at . . . subscriber premises.” To the contrary, the specification repeatedly highlights wireless access devices disposed at subscriber premises as a key part of the invention. *See supra* at Section A.1. Because the context already clearly links “wireless access devices disposed at a plurality of subscriber premises” to “wireless access devices” later in the claim body, the lack of an additional linking term does not prevent the former term from serving

³ The preamble to Claim 19 is likewise limiting because it provides the antecedent basis for “said associated cell site.” ‘931 patent at 32:27. That preamble explains that the cell site is “associated” with the “wireless access network,” which in turn is defined as including the same “plurality of base stations” in Claim 1, which are again defined in Claim 19 by their ability to perform TDD communication with “wireless access devices disposed at a plurality of subscriber premises.” *Id.* at 32:16-21. So Claim 19’s preamble and its reference to “wireless access devices” are limiting for the same reasons as Claim 1’s.

⁴ *TomTom, Inc. v. Adolph* confirms that “wireless access devices disposed at a plurality of subscriber premises” is limiting because it “provides a necessary structure for [Claims 1 and 19],” just like the “destination tracking system of at least one mobile unit” held limiting in that case. 790 F.3d 1315, 1323 (Fed. Cir. 2015). The relevant language in Claims 1 and 19 is nothing like “a method for generating and updating data,” which *TomTom* held was *not* limiting because it merely “stat[ed] a purpose or intended use and employ[ed] the standard pattern of such language.” *Id.* at 1324.

as the antecedent basis for the latter. *See, e.g., Potter Voice Techs. LLC v. Google, Inc.*, 2015 WL 13612121, at *1 (D. Colo. Nov. 6, 2015) (master's recommendation) ("Although the limitation does not use the term 'said' to reference the digital computer in the preamble, it is clear that this limitation and the preamble are referring to the same digital computer.").

B. "Wireless access devices" must be fixed at subscriber premises.

Claim Term	Defendants' Construction	Plaintiff's Construction
"wireless access devices disposed at a plurality of subscriber premises" / "wireless access device[s]" ⁵	"wireless access device[s] that [are/is] fixed at subscriber premises"	Plain and ordinary meaning <i>or</i>
All asserted claims ⁶		"wireless access devices at multiple subscriber locations"

Sprint's construction, which requires wireless access devices to be fixed at subscriber premises, is necessary to give meaningful effect to all of the claim language and to implement a fundamental feature of the patent as reflected in the specification. This construction properly reflects the '931 patent's focus on *fixed* wireless access devices as distinguished from *mobile* wireless access devices.⁷

⁵ "[W]ireless access devices disposed at a plurality of subscriber premises" appears in the body of Claim 10 together with its dependents, and in the preambles of Claims 1 and 19 and their dependents. "[W]ireless access device[s]" appears either expressly or through dependency in all asserted claims.

⁶ In accordance with GAS's July 27 Preliminary Election, *see* Ex. 2, the asserted claims still at issue in the case are 2-4, 6-9, 13, 18, 20, 22-23, 26, and 28-29.

⁷ GAS's infringement contentions accuse both fixed and mobile wireless access devices. GAS accuses, in part, "mobile, fixed mobile and user equipment capable at least of communicating with the Defendant's WiMAX, LTE and 5G wireless networks, such as mobile phones and other mobile computing devices, mobile smartphones, mobile wifi hotspots, fixed wireless to wifi routers, fixed wireless to wired routers, fixed mobile cell extenders, and others."

1. The claim language requires wireless access devices to be fixed at subscriber premises.

a. Claim terms are superfluous unless Sprint's construction is adopted.

First, Sprint's construction is needed to give meaningful effect to *all* claim language.

Bicon, Inc., 441 F.3d at 950 (“[C]laims are interpreted with an eye toward giving effect to all terms in the claim.”). In particular, Sprint’s construction gives meaning to all the words “disposed at a plurality of subscriber premises” as confirming that the wireless access devices must be fixed at subscriber premises.

GAS argues that “disposed at . . . subscriber premises” simply means located wherever the subscriber happens to be. *See GAS Br. 14* (“[T]he term ‘premises’ should be construed to cover any subscriber location, whether stationary or mobile.”). But that construction would render those words mere surplusage because they would have no more meaning beyond “wireless access devices” standing alone. In the physical world, no two physical wireless access devices could be in exactly the same location. So those seven disputed words do no meaningful work if they have the meaning GAS suggests. Indeed, GAS apparently admits that it views “disposed at . . . subscriber premises” as surplusage because it insists that the phrase “could be excised from the preambles without impacting ‘the structure or steps of the claimed invention.’” GAS Br. 8. Whereas GAS views any restriction to fixed devices as immaterial, *see GAS Br. 15* (“Any base station capable of communicating with mobile devices would be equally capable of communicating with fixed devices.”), the specification places that restriction at the heart of “the present invention.” *See* ‘931 patent at 9:17-22; Section B.1 *supra*.

b. The plain meaning of “disposed” and “premises,” confirmed by the specification, supports Sprint’s construction.

The ordinary meaning of the terms in the limitation “wireless access devices disposed at a

plurality of subscriber premises” also shows why the wireless access devices must be fixed at subscriber premises. As confirmed in the specification, the term “subscriber premises” means brick-and-mortar buildings, to which subscribers’ wireless access devices are naturally fixed.

The specification—which is “the single best guide to the meaning of a disputed term,” *Phillips*, 415 F.3d at 1321—shows that “subscriber premises” means buildings rather than “any subscriber location, whether stationary or mobile.” GAS Br. 14. All of the “premises” identified in the specification are types of buildings: “Subscriber premises 121-123 may comprise many different types of residential and commercial *buildings*, including single family homes, multi-tenant offices, small business enterprises (SBE), medium business enterprises (MBE), and so-called ‘SOHO’ (small office/home office) premises.” ‘931 patent at 11:64-12:4. Figure 1 portrays the exemplary “premises” as houses:

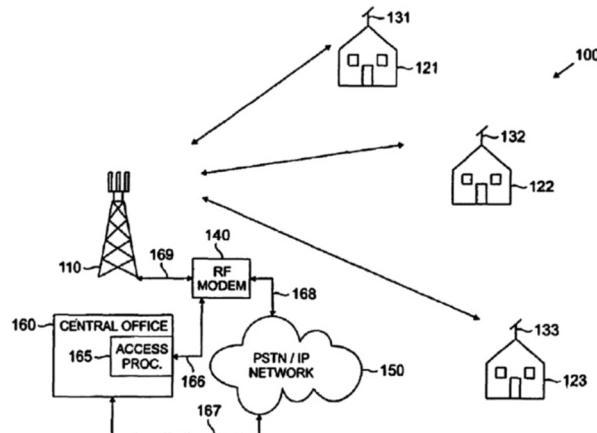


FIG. 1

Other references to “premises” are also uniformly references to *buildings*. See, e.g., ‘931 patent 4:19-21 (“[W]ireless access systems have been developed and deployed to provide broadband access to both *commercial and residential* subscriber premises.”); accord *id.* at 5:18-31 (describing transmissions “to fixed location antennas attached to the *residences or offices* of subscribers.”).

GAS ignores the specification’s illumination of the term “subscriber premises,” instead

deploying the pre-*Phillips* “methodology [that] placed too much reliance on extrinsic sources such as dictionaries, treatises, and encyclopedias and too little on intrinsic sources.” *Phillips*, 415 F.3d at 1320; *see also* GAS Br. 9-10, 14-15. But even GAS’s dictionaries show that “premises” implies buildings. *See* Ex. 3, Webster’s New World Dictionary (“a piece of real estate; house or building and its land”); *see also* Ex. 4, Newton’s Telecom Dictionary (“The space occupied by a customer or authorized or joint user *in a building or buildings . . .*”).⁸

Next, GAS tries to rebut the need for *fixed* wireless access devices by consulting general-purpose definitions of “disposed.” *See* GAS Br. 9-10; *but see Phillips*, 415 F.3d at 1322 (“a general-usage dictionary cannot overcome art-specific evidence of the meaning of a claim term”). But GAS’s own extrinsic evidence supports Sprint’s construction because none of its proffered dictionary definitions suggests that a “disposed” item remains mobile. GAS Br. 9-10. To the contrary, if “dispose” means “to place in a certain order or arrangement,” *id.* (quoting Webster’s New World Dictionary), then an item moved from that certain order or arrangement is no longer “disposed.” That definition thus supports Sprint’s construction, because a wireless access device moved from the subscriber premises is no longer “disposed” there.⁹

⁸ GAS’s brief introduced extrinsic evidence in the form of a Federal Communications Commission ruling not cited in the parties’ Rule 4-3 Statement (Dkt. 73-1). GAS Brief 14. That ruling is irrelevant in any event because it does not purport to illuminate “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention” as used in the ’931 patent. *Phillips*, 415 F.3d at 1313. Instead, the ruling broadly defined terms in a consumer-protection statute and regulations to “serv[e] the purpose of the rule [and] the underlying statute.” 8 FCC Rcd. 6171, 1993 WL 757287, at ¶ 16; *id.* at ¶ 2 n.5.

⁹ GAS argues that “disposed” does not mean “fixed” in the specification because “[t]he word disposed shows up only twice” and “in exactly the same context as it appears in the preambles.” GAS Br. 10. GAS miscounts. As a correction, Sprint notes that the specification uses that term a *third* time to describe how “[t]ransceiver base stations . . . are disposed in cells sites.” ‘931 patent 13:17-18. “Disposed” refers to a “fixed” object in that context.

2. The specification confirms that wireless access devices fixed at subscriber premises are a fundamental feature of the invention.

The specification of the ‘931 patent insists that the patent is directed to *fixed* wireless access devices. “The claims of the patent must be read in light of the specification’s consistent emphasis on this fundamental feature of the invention.” *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1324 (Fed. Cir. 2008). Sprint’s construction is necessary to remain true to the ‘931 patent’s “consistent emphasis”; GAS’s construction, by contrast, would excise this fundamental feature of the invention.

As explained above (at 3), the ‘931 patent identifies the central problem in the prior art as the “need . . . for a fixed wireless access network that maximizes spectral efficiency between the base stations of the fixed wireless access network and *the subscriber access devices located at the subscriber premises.*” ‘931 patent at 9:1-4. To “address th[at] deficienc[y]”, “it is a primary object of *the present invention* to provide a transceiver for use in a wireless access network comprising a plurality of base stations, each of the plurality of base stations capable of bidirectional time division duplex (TDD) communication with *wireless access devices disposed at a plurality of subscriber premises* in a corresponding cell site.” *Id.* at 9:16-23. Thus, the patent answered that problem with a fixed-device solution. *Id.* at 5:25-28 (describing fixed wireless system transmissions “to fixed location antennas attached the residences or offices of subscribers”); *see Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007) (“When a patent thus describes the features of the ‘present invention’ as a whole, this description limits the scope of the invention.”); *Honeywell Int'l Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318-19 (Fed. Cir. 2006) (the terms “this invention” and “the present invention” supported limiting the term to the meaning disclosed in the specification).

Indeed, not one embodiment involves mobile wireless access devices. *See Kinetic*

Concepts, Inc. v. Blue Sky Med. Group, Inc., 554 F.3d 1010, 1018-19 (Fed. Cir. 2009)

(construing “wound” as limited to skin wounds because “[a]ll of the examples described in the specification involve skin wounds”). Figure 1, for example, highlights an “exemplary fixed wireless access network.” ‘931 patent at 11:55. There, “[s]ubscriber premises 121-123” (depicted as houses) “transmit and receive via fixed, externally-mounted antennas 131-133.”¹⁰ *Id.* at 11:64-65. *See Hologic, Inc. v. SenoRx, Inc.*, 639 F.3d 1329, 1338 (Fed. Cir. 2011) (finding “the specification, including the figures” supported the proper construction of the claims). GAS does not identify any embodiments supporting its assertion that the claims extend past fixed wireless access devices to include mobile devices.

GAS cites several cases refusing to import limitations from the specification when those limitations lack a textual basis in the claims. GAS Br. 19-20. Those cases miss the point. The specification of the ‘931 patent merely (but forcefully) confirms the plain and ordinary meaning of limitations already present in the claims. *See* Section B.1.

3. “Wireless access devices” refers to “wireless access devices disposed at a plurality of subscriber premises,” properly construed.

Later references to “wireless access devices” in the claim body likewise should be construed as “wireless access device[s] that [are/is] fixed at subscriber premises.” Grammatically, those later references are most naturally read as referring to the preamble’s recitation of “wireless access devices disposed at a plurality of subscriber premises.” That is true whether or not—as explained above—the preamble itself is limiting. *See* Section A *supra*.

¹⁰ Recognizing that the specification describes the “antennas” that communicate with base stations as “fixed location antennas attached to the residences or offices of subscribers,” ‘931 patent at 5:25-28, GAS tries to distinguish “antennas” from “wireless access devices.” GAS Br. 12-13. But the specification does not differentiate the wireless access device from its antenna and instead uses those terms synonymously: both antennas and wireless access devices are the structures that “transmit and receive” to and from base stations. *See* ‘931 patent at 11:64-65; *id.* at 9:31-33, 38-39, 56-58, 61-63, 66-67; 10:4-5.

And substantively, it would be odd to construe the claims as injecting a *different* set of wireless access devices into the claim bodies without introduction. It would be even odder to do so here, because each independent claim requires the ability to “communicat[e] with wireless access devices disposed at a plurality of subscriber premises.” Construing later references to “wireless access devices” as *not* limited to those that “are disposed at a plurality of subscriber premises” would imply that base stations must communicate with wireless access devices with which they need not be able to communicate. *See GAS Br. 15.* That construction would make the claims self-defeating. And nothing in the specification contemplates base station transceivers that are *capable* of transmitting to fixed wireless access devices but nevertheless transmit to mobile devices, which is how GAS would have the Court read the claims.

On the assumption that the preamble is not limiting, *but see* Section A *supra*, GAS argues that “wireless access devices” standing alone could include mobile devices because “mobile wireless access networks were well-known at the time.” GAS Br. 16-18. GAS is right about mobile networks being well-known but wrong about the implication: despite skilled artisans’ awareness, the specification mentions “mobile” devices *not even once*. That gaping omission of well-known technology confirms what the rest of the specification already makes clear: the invention does not include mobile wireless access devices.

4. GAS’s arguments against construing “wireless access device” cannot overcome the text of the claims and the consistent emphasis of the specification.

GAS takes aim at a strawman construction of “wireless access *network*,” a term neither party sought to construe until GAS’s opening brief. *See GAS Br. 6, 12-14.* But the term at issue is “wireless access *device*,” so GAS’s arguments against limiting “wireless access network” to fixed networks miss the mark.

First, it does not help GAS’s case that “the present invention may be implemented in any

suitably arranged wireless access system.”” GAS Br. 12 (quoting ‘931 patent at 11:51-54).¹¹ Sprint’s construction of “wireless access device” does not itself mandate that the entire network is fixed. GAS could still argue that the asserted claims of the ‘931 patent as written (assuming *arguendo* described and enabled by the specification) would allow a communication over a *non-fixed* wireless access network, such as a satellite network, as long as the communication was received by a *fixed* wireless access device. *See, e.g.*, GAS Br. Ex. M at 46, GAO Government Accounting Office Report: Technological and Regulatory Factors Affecting Choice of Internet Providers (October 2000) (distinguishing “satellite systems,” which provide internet service to a fixed “reception dish,” from “fixed wireless technologies”). Indeed, GAS’s own analysis reflects that the construction of “wireless access network” does not control whether wireless access devices must be fixed. GAS asserts that “Claim 10 is expressly limited to ‘[a] fixed wireless access network,’ GAS Br. 6, yet insists that such a fixed network allows communication with *mobile* wireless access devices, GAS Br. 15 (asserting that claims 11 and 15-18, which are dependent on claim 10, are not limited to fixed wireless access devices despite those claims requiring a “fixed wireless access network”). By the same token, even if the asserted claims as written were deemed to cover a non-fixed wireless access network, that does not eliminate the fixed-device limitation.

GAS’s claim differentiation argument also is irrelevant because the construction of “wireless access network” is not at issue. GAS Br. 13-14. Whether certain claims refer to a “wireless access network” and others refer to “fixed wireless access network” is not the salient question. What matters here to claim differentiation is whether the claims uniformly refer to the

¹¹ Even if the construction of “wireless access network” were at issue, the only “suitably arranged” wireless access networks would be ones that communicate with the fixed wireless access devices touted by the specification.

“wireless access *device*” in the same way. They do. While a reference to a “*fixed* wireless access device” in the claims or specification might, depending on the circumstances, suggest a broader scope to “wireless access device,” there is no such reference anywhere in the patent. Claim differentiation simply has nothing to say about “wireless access devices.”

Nothing in the prosecution history broadens the meaning of “wireless access devices” to include mobile devices either. GAS relies heavily on the fact that the examiner and inventor did not distinguish prior art as claiming mobile rather than fixed wireless access networks. GAS Br. 10-11. Again, the question relevant here is whether that prior art disclosed fixed wireless access *devices*. As the prior art’s specification suggests, its access devices were not limited to *mobile* “user stations.” *See* Ex. 5, U.S. Patent No. 6,094,421 at 23:60-62 (“Scott”) (“a first user station . . . *may be* mobile”); *see also* GAS Br. Ex. E, June 7, 2006 Final Rejection 9 (“Scott teaches (column 2 lines 19-27) user stations *are often* mobile”). So it is doubtful that the inventor could have distinguished Scott as claiming only non-fixed wireless access devices, and unsurprising that the inventor sought (successfully) to distinguish Scott on other grounds.

In any event, “because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Phillips*, 415 F.3d at 1317. GAS’s snapshot of the file history especially lacks clarity because it depends on what the negotiating parties *did not say*. *See DeMarini Sports, Inc. v. Worth, Inc.*, 239 F.3d 1314, 1326 (Fed. Cir. 2001) (“[J]ust as we can draw no inference from what the examiner did not say, we can draw no inference from what [the patentee] did not argue.”). So the fact that the inventor and examiner agreed on a different way to distinguish prior art before addressing the ‘931 patent’s limitation to fixed wireless access devices does not move the needle.

Nor did the meaning of “wireless access devices” change in the IPR, where neither the Board nor any party construed that term. GAS Brief 12. And the Vornefeld reference does not bear on the distinction between fixed and mobile wireless access devices because its so-called “mobile terminals (MTs)” were used in a fixed setting, i.e. an indoor picocellular environment where both the base station is fixed and the MT remains at the subscriber premises. *See* Ex. 6 at 56; *see also id.* at 53 (Fig. 2 depicting MTs as desktop computer terminals rather than mobile phones). Indeed, Vornefeld is “embedded in the framework of the HIPERLAN/2 system,” *id.* at 52 & 57 n.[2] (citing ETSI HIPERLAN/2 standards), which supports “local wireless access . . . by both moving and *stationary terminals.*” (*See* Ex. 7, ETSI, High Performance Radio Local Area Networks (HIPERLAN) at 11 (July 1997)). In any event, the question before the Court is how to construe the “wireless access device[s]” term under *Phillips*, not how to determine the broadest reasonable interpretation of that phrase as in IPR. *See Rembrandt Wireless Techs., LP v. Apple, Inc.*, 2020 WL 248787, at *10 (E.D. Tex. Jan. 15, 2020); *see also PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC*, 815 F.3d 734, 740 (Fed. Cir. 2016) (“District courts, by contrast, do not assign terms their broadest reasonable interpretation.”). GAS thus offers no persuasive reason to depart from the construction required by the claim language and specification.

C. Directed scanning beam signals are pre-programmed.

Claim Term	Defendants’ Construction	Plaintiff’s Construction
“directed scanning beam signals”	“signals transmitted using a beam pattern selected from a pre-programmed set of directed beam patterns”	Plain and ordinary meaning <i>or</i> “[an] antenna radiation pattern[s] aimed in [a] particular direction[s]”
All claims		

The dispute over “directed scanning beam signals” is twofold. First, the parties disagree

whether the claimed directed scanning beam signals used in beam scanning must utilize a beam pattern selected from a pre-programmed set of directed beam patterns. Sprint's construction includes that limitation because the specification and prosecution history require it; GAS omits it. Second, and independent of the "pre-programmed" requirement, the parties disagree over GAS's attempt to replace the claims' use of the precise terms "beam signals" and "directed" with the imprecise, broader concepts of any "radiation pattern" that is aimed in any "particular direction." On both counts, GAS's construction is untethered from the claims and intrinsic record, whereas Sprint's construction adheres to the '931 patent's own definition of "beam scanning" and description of the "present invention."

- 1. By requiring pre-programming, Sprint's construction captures the definition set forth in the '931 patent as a key aspect of the invention.**
 - a. The '931 patent defines directed scanning beam signals that are pre-programmed in a process called "beam scanning."**

The '931 patent defines "beam scanning" as a process in which directed scanning beam signals are selected from *pre-programmed* sets of directed beam patterns. When the claims deploy that same concept of "beam scanning" by reciting a "directed scanning beam signal," the patentee's definition applies.

The specification's definition of "beam scanning" unites that concept with the "directed scanning beam signals" recited in the claims. The patent states "[t]he present invention uses pre-programmed sets of *directed beam patterns* to cover a cell in an angular fashion. *This is referred to herein as 'beam scanning.'*" '931 patent at 28:1-3. The specification then elaborates that "beam scanning" uses "directed scanning beams" to cover a cell sector. *Id.* at 28:5-9; *see also* Figure 12A (showing an exemplary pattern of nine directed scanning beams covering a cell). In the IPR, GAS confirmed this definition of beam scanning: "The invention disclosed in the '931 patent 'uses pre-programmed sets of directed beam patterns to cover a cell in angular fashion,'

which is defined in the specification as ‘beam scanning.’” Ex. 8 (POR) at 7 (referencing ’931 patent at 28:1-3).¹²

The definition of “beam scanning” is not just compelling evidence of the meaning of “directed scanning beam[s]”; it is the *only* evidence. The ’931 patent does not disclose or even suggest any other type of beam scanning, nor does it disclose or suggest any non-pre-programmed directed scanning beam. So the ’931 patent’s definition of beam scanning is the only “hint the specification provides” as to what is meant by the claimed “directed scanning beam signal.” *See Candela Corp. v. Palomar Med. Techs., Inc.*, No. 9:06-CV-277, 2008 WL 3285255, at *9 (E.D. Tex. Aug. 6, 2008) (construing term “epidermal region” based on definitional language in the specification describing the “epidermis and the upper layers of the dermis”).

b. The ’931 patent highlights the critical importance of the pre-programmed “directed scanning beam” to the present invention.

Both GAS and the inventor of the ’931 patent also highlighted the “pre-programmed” nature of the directed scanning beams as a key aspect of the claimed invention. GAS admitted in the IPR that “[t]he invention disclosed in the ’931 patent ‘uses pre-programmed sets of directed beam patterns to cover a cell in angular fashion,’ which is defined in the specification as ‘beam scanning.’” Ex. 8 (POR) at 7 (referencing ’931 patent at 28:1-3). Likewise, the ’931 patent expressly states, “*The present invention* uses pre-programmed sets of directed beam patterns to cover a cell in an angular fashion. This is referred to herein as ‘beam scanning.’” *Id.* at 28:1-5. *See also id.* at 27:61-64 (“*The present invention* uses a combination of the following techniques to maximize frequency re-use and the number of subscribers per base station in wireless access

¹² GAS’s expert in the IPR, Kurt Humphrey, agreed. Ex. 9 (Humphrey Dec.) at ¶ 27.

network 100: 1) beam scanning within a cell sector . . .”). The inventor thus expressly characterized the “present invention” as requiring “*pre-programmed* sets of directed beam patterns to cover a cell in an angular fashion.”¹³

Not only does the ’931 patent refer to “beam scanning” / “pre-programmed sets of directed beam patterns” as the present invention, but the ’931 patent also touts multiple advantages that it associates only with the invention’s use of beam scanning/pre-programmed directed scanning beams. First, beam scanning as defined by the specification allows the network to “maximize frequency re-use and the number of subscribers per base station.” *Id.* at 27:61-63. Second, “based on physical location in the sector, a specific beam is used to communicate with one or more subscribers that lie in that sector.” *Id.* at 28:10-13.

“When a patent thus describes the features of the ‘present invention’ as a whole, this description limits the scope of the invention.” *Regents of Univ. of Minnesota v. AGA Med. Corp.*, 717 F.3d 929, 936 (Fed. Cir. 2013) (internal citations omitted). This is especially true where, as here, the patent invokes the particular advantages achieved by the present invention. See, e.g., *Honeywell*, 452 F.3d at 1318 (“[t]he written description’s detailed discussion of the prior art problem addressed by the patented invention, *viz.*, leakage of non-metal fuel filters in EFI systems, further supports the conclusion that the fuel filter is not a preferred embodiment, but an only embodiment”); *VStream Techs., LLC v. PLR Holdings, LLC*, No. 6:15-cv-974-JRG-JDL, 2016 WL 5387777, at *6 (E.D. Tex. Sept. 27, 2016) (“In this case, where the specification consistently refers to the processing of sensor data as ‘the present invention,’ . . . and also touts the advantages of mosaic sensor data specifically, it is proper to limit this claim term to mosaic

¹³ In the face of the definition in the specification, GAS can only speculate that the inventor’s background “likely informed his choice of the word ‘scanning’ to describe the beams used in the invention.” GAS Br. 21.

sensor data”).¹⁴

Thus, the correct construction of “directed scanning beam signals” is the one that the inventor of the ’931 patent identified definitionally as a core part of his invention: signals transmitted using a beam pattern selected from a pre-programmed set of directed beam patterns.

2. GAS offers no justification for excising the pre-programming requirement.

GAS alleges that the ’931 patent “expressly discloses the use of adaptive beamforming based on calculations performed by the base stations,” and is therefore not limited to pre-programmed beams. GAS Br. 21. This is wrong in multiple respects. First, the ’931 patent describes the use of “selectively adaptable beam forming,” ’931 patent at 3:30-31, which is consistent with adapting the *selection* of a beam from a pre-programmed beam pattern, but *not* “dynamically steer[ed] beams” and “real time” processing of antenna delays as GAS alleges. GAS Br. 22. Second, GAS errs in relying on the ’931 patent to equate digital beam forming to adaptive beam forming. *Id.* In fact, the ’931 patent makes it clear that regardless of whether the beam forming is digital or analog, pre-programmed weights or delays are used. ’931 patent at 26:29-31; 27:61-67; 28:1-9. Thus, while the *mode* of beamforming may be either analog or digital, the *variety* of beam forming is only “selectively adaptable beam forming” based on “pre-programmed sets of directed beam patterns.” *Id.* at 3:30-31, 28:1-3.

GAS’s reliance on the ’931 patent’s description of “rapid calculation of adaptive cancellation” in a “digital baseband beam-forming system” is misplaced too. ’931 patent at 27:46-48; GAS Br. 22. The disputed claim term is directed to transmission of desired directed

¹⁴ Elsewhere in its brief, GAS cites *Imaginal Systematic, LLC v. Leggett & Platt, Inc.*, 805 F.3d 1102 (Fed. Cir. 2015) as an example where the court found that “present invention” language in the specification did not limit the claims. GAS Br. 19. But the patent at issue in *Imaginal Systematic* described several embodiments of the claimed “vision guidance system,” unlike here, where the only embodiment of “directed scanning beams” is pre-programmed. 805 F.3d at 1110.

scanning beam signals, not to the cancellation of unwanted or interfering signals. Critically, GAS ignores the specification’s discussion of “beam scanning,” as defined, as providing one of the key advantages of the ’931 patent: maximizing frequency re-use and the number of subscribers per base station. ’931 patent at 27:61-64.

GAS next trumpets that the specification describes as “exemplary” the “beam scanning pattern 1210” in Figure 12A of the ’931 patent. GAS Br. 24. Yet the “exemplary” nature of the pattern refers to the number of pre-programmed beams and their relative size and shape, not to the requirement of pre-programming itself. *See* ’931 patent at 28:30-31 (“wireless access network 100 may use a large number of beams to cover a sector.”) True to the specification, Sprint’s construction does not limit either the number of directed scanning beams that comprise the beam pattern, nor does it limit any directed scanning beam’s respective size or shape.

GAS also points to the Examiner’s rejection of the claims over a prior art reference (Scott) during prosecution. GAS Br. 22-23. Yet the very passage from Scott cited by the Examiner discloses *pre-programmed* beams. *See* GAS Br. Ex. C at 22:57-60 (“[t]he antenna adjustment interval 1017 may be of sufficient duration to allow transmission of a data symbol indicating *selection of a particular antenna beam . . .*”). This “antenna adjustment interval 1017” is part of a transmission from the user terminal to the base station. Ex. 5 (Scott patent) at Figure 10A; *see also id.* at 22:57-63. A user terminal would be unable to inform the base station of its selection of a “particular” antenna beam if the beams were not pre-programmed.

Finally, GAS cites testimony from James Proctor, Sprint’s expert in the IPR. GAS Br. 23-25. That testimony does not support GAS’s position here. Sprint proffered two alternative constructions for “directed scanning beam signal” in the IPR – a broader interpretation without pre-programming and a narrower one with pre-programming. Ex. 10 (Petition) at 12-13. Mr.

Proctor testified that, under the broadest reasonable interpretation standard applicable in the IPR, the broader interpretation would apply: “I would say the broadest reasonable interpretation is the one I proposed.” Ex. 11 (Proctor Depo) at 10:17-18. The broadest reasonable interpretation standard is inapplicable to claim construction here under *Phillips*. *PPC Broadband*, 815 F.3d at 740. Regardless, the Board determined (and GAS agreed) that it was unnecessary to construe “directed scanning beam signal” in order to resolve any issues in the IPR. GAS Br. Ex. T (FWD) at 15.

3. GAS’s construction vitiates the claim requirements of a “beam signal” that is “directed,” as distinguished from a broadcast beam

Irrespective of the pre-programmed dispute, the Court should reject GAS’s proposed construction that directed scanning beam signals are simply “[an] antenna radiation pattern[s] aimed in [a] particular direction[s].” That construction removes critical limitations from the claims and eliminates the distinction between a “directed scanning beam signal,” on the one hand, and the separately claimed “broadcast beam signal.”

First, GAS replaces the claim term “beam,” which is found throughout the claims and specification, with the more expansive and amorphous “antenna radiation pattern.” Yet not once does the specification use the phrase “antenna radiation pattern,” much less equate that phrase to the claimed “beam.” Moreover, while a beam may be a type of directional “antenna radiation pattern,” antennas emit many radiation patterns that are *not* beams.¹⁵

Second, GAS’s proposed construction eliminates the claimed contrast between the “directed scanning beam signals” and a “broadcast beam signal” by defining the former so broadly as to encompass the latter. All of the asserted claims recite the separate “broadcast beam

¹⁵ GAS’s own IEEE dictionary definition expressly states that a beam is “[t]he *major lobe* of the radiation pattern of an antenna,” and not simply any radiation pattern. GAS Br. 22.

signal,” which is transmitted to wireless access devices within more than one sector. ’931 patent at 30:44-48, 31:35-38, 32:25-29. The specification also highlights the distinction between the broadcast beam signal and the directed scanning beams, and never conflates the two concepts. *Compare* ’931 patent at Figures 12A (showing pattern of pre-programmed directed scanning beams) *with id.* at Figure 13A (showing broadcast beam). Yet a “broadcast beam signal” is likewise a “radiation pattern aimed in a particular direction” (e.g., in the direction of at least two sectors in the cell). GAS’s construction thus violates the principle that “two different terms used in a patent have different meanings,” *Comaper Corp. v. Antec, Inc.*, 596 F.3d 1343, 1348 (Fed. Cir. 2010), and that each term must be given effect, *see Bicon, Inc.*, 441 F.3d at 950 (“[C]laims are interpreted with an eye toward giving effect to all terms in the claim.”).

Finding no support in the intrinsic record for its construction, GAS can only point to dictionary definitions of “beam” or “beam steering,” GAS Br. 22, yet the term being construed is “directed scanning beam signal,” and not merely “beam” or “beam steering.”¹⁶ Regardless, GAS’s dictionary definitions cannot trump the ’931 patent’s own express definition. *See Contentguard Holdings, Inc. v. Amazon.com, Inc.*, No. 2:13-cv-1112-JRG, 2015 WL 8073722, at *4 (E.D. Tex. Dec. 4, 2015) (“Phillips rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony”) (*aff’d sub nom. Contentguard Holdings, Inc. v. Apple Inc.*, 701 F. App’x 957 (Fed. Cir. 2017), and *aff’d sub nom. Contentguard Holdings, Inc. v. Google, Inc.*, 701 F. App’x 963 (Fed. Cir. 2017)). The Court should reject GAS’s construction and adopt Sprint’s.

¹⁶ The term “beam steering” is not found anywhere in the intrinsic record of the ’931 patent.

D. Sprint’s construction of the “transmits/transmitting, in . . . said TDD frame” limitation is mandated by GAS’s clear and unmistakable disclaimer.

Claim Term	Defendants’ Construction	Plaintiff’s Construction
“[transmits/transmitting], in said downlink portion of said TDD frame, second downlink data traffic” Claims 28, 29	“[transmits/transmitting] second downlink data traffic in the same time frame and in the same spatial domain as the first downlink data traffic”	Plain and ordinary meaning, <i>or</i> TDD frame: “a set of uplink and/or downlink transmission time slots”

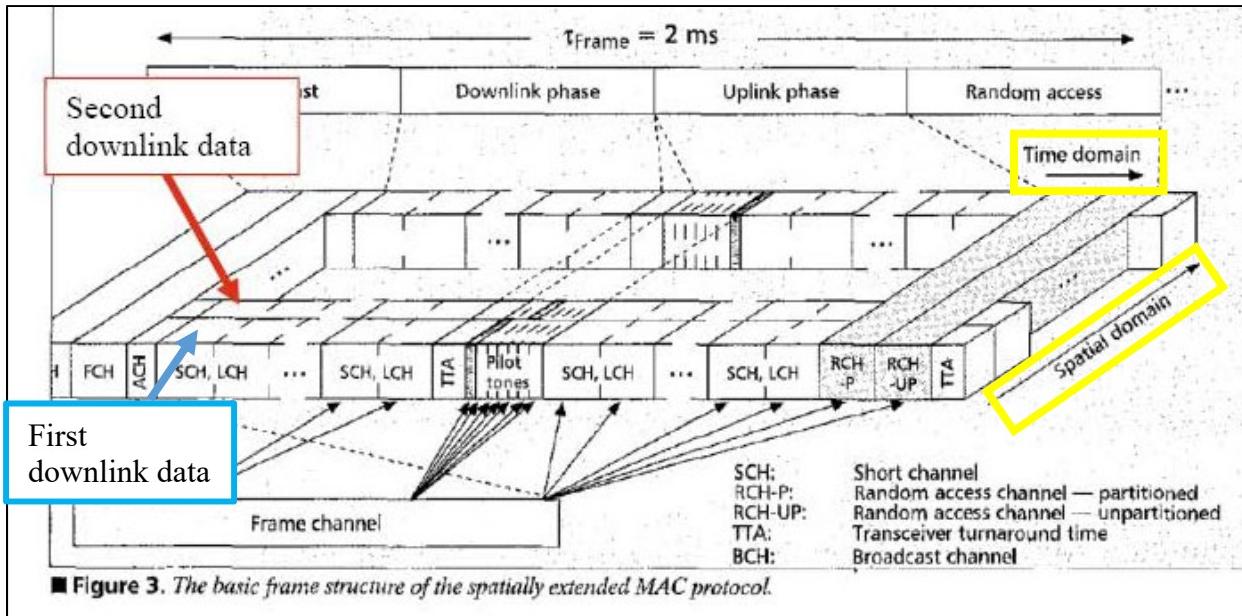
The dispute between the parties over the claim phrase “[transmits/transmitting], in said downlink portion of said TDD frame, second downlink data traffic” boils down to whether the “said TDD frame” is measured only in time, or whether it also has a spatial requirement. In order to overcome the prior art of record during the *inter partes* review of the ’931 patent, GAS made clear and unmistakable statements that “said TDD frame” includes both a time *and* a spatial dimension. These statements were the basis on which claims 28 and 29 survived IPR, as made clear by the Federal Circuit’s affirmance. *See Sprint Spectrum L.P. v. Gen. Access Sols., Ltd.*, No. 2019-1855, 2020 WL 2465414, at *6 (Fed. Cir. May 13, 2020) (“These disclosures support the Board’s interpretation of [the prior art] as one in which the parallel lines represent *spatially separated frames sent simultaneously—not components of one large frame*, as Sprint proposes.”).

Sprint’s proposed construction holds GAS to this disclaimer. *See SanDisk Corp. v. Memorex Prod., Inc.*, 415 F.3d 1278, 1286 (Fed. Cir. 2005) (“When the patentee makes clear and unmistakable prosecution arguments limiting the meaning of a claim term in order to overcome a rejection, the courts limit the relevant claim term to exclude the disclaimed matter.”); *see also Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1362 (Fed. Cir. 2017) (“[W]e hold that statements made by a patent owner during an IPR proceeding, whether before or after an institution decision, can be considered for claim construction and relied upon to support a finding

of prosecution disclaimer.”). But GAS’s construction impermissibly seeks to recapture the very claim scope it surrendered in the IPR.

1. GAS clearly and unmistakably limited “said TDD frame” during the IPR.

In its IPR petition, Sprint relied on the following figure (annotated here) from a prior art printed publication (“Vornefeld”) to show that the limitations of claims 28 and 29 were obvious:



Ex. 8 (POR) at 26 (citing Petition at 35 and 50). Sprint argued that the first blocks along the “spatial domain” axis (annotated above in blue) are the claimed “first downlink data,” while the second blocks along the “spatial domain” axis (annotated above in red) are the claimed “second downlink data.” *Id.* Following institution, in its Response, GAS distinguished Vornefeld by arguing that the “second downlink data” shown in Vornefeld’s Figure 3 was not transmitted in the *same* TDD frame as the “first downlink data” (as required by claims 28 and 29):

The second downlink data identified by Petitioner, however, is in a different, spatially-separated, simultaneous TDD frame but not necessarily in a different sector as required by Claims 28 and 29. Claims 28 and 29 require that the second downlink data traffic be transmitted in “*said TDD frame*,” to wireless devices within another sector. This is not shown or disclosed in Vornefeld.

Id. Here, GAS argued that the allegedly “different, spatially-separated, simultaneous TDD frame[s]” in Vornefeld were not part of the claimed “said TDD frame,” as required by the plain language of claims 28 and 29. In other words, as argued by GAS, the first downlink data and the second downlink data are transmitted in same “said TDD frame” only if they are in the same time domain *and* in the same spatial domain (i.e., not “spatially-separated”).

The PTAB relied on GAS’s statements in its Final Written Decision finding claims 28 and 29 not unpatentable, and the Federal Circuit affirmed on that basis. In its Final Written Decision, the PTAB found:

Claim 28 requires the transmit circuitry to transmit second downlink data traffic in the same (said) downlink portion of the same (said) TDD frame recited in claim 1. *The block that Petitioner relies on for the second downlink data traffic is depicted as a different (spatially separated) TDD frame that is simultaneously transmitted with the other frames. . .* We agree with Patent Owner that Petitioner does not establish Vornefeld discloses using different beams in the same TDD frame (i.e., second downlink data traffic, transmitted in “said downlink portion of said TDD frame”) to transmit to devices within a different sector.

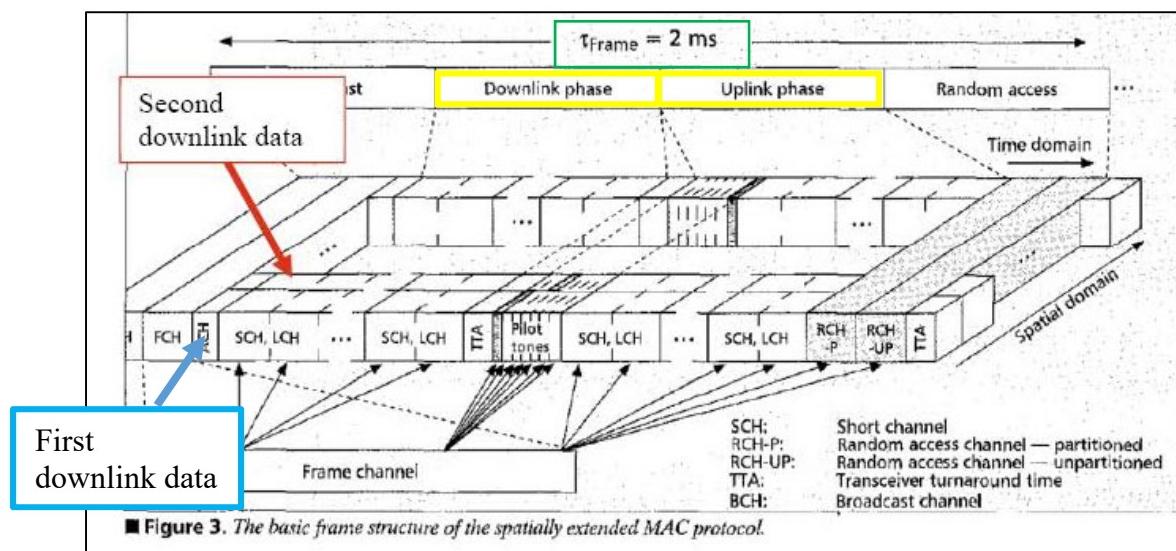
GAS Br. Ex. T (FWD) at 23). In its Federal Circuit appellee’s brief, GAS stated “[t]he Board agreed with GAS that the second downlink data [in Vornefeld] is in a different, spatially-separated, simultaneous TDD frame. Claims 28 and 29 require that the second downlink data be in the same TDD frame.” GAS Br. Ex. W (GAS Response Brief) at 27. The Federal Circuit agreed with GAS when it affirmed the PTAB’s decision as to claims 28 and 29. *See Sprint Spectrum*, 2020 WL 2465414, at *6 (“These disclosures support the Board’s interpretation of Figure 3 [of Vornefeld] as one in which the parallel lines represent spatially separated frames sent simultaneously—not components of one large frame, as Sprint proposes.”).¹⁷ GAS

¹⁷ GAS suggests the Board determined Vornefeld did not show transmissions to “devices within a different sector.” GAS Br. at 27-28. But both GAS’s appeal brief and the Federal Circuit’s opinion show that both GAS and the Federal Circuit understood the basis for the Board’s decision to be Sprint’s alleged failure to show Vornefeld’s disclosure of “said TDD frame.”

statements in the IPR (and to the Federal Circuit) were clear and unmistakable, and Sprint's construction is the only one that is consistent with GAS's disclaimer, which drove the PTAB's and Federal Circuit's decisions.¹⁸

2. GAS's proposed construction reads on the same prior art GAS previously overcame.

GAS's proposed construction also fails because its broad construction of "TDD frame" as simply "a set of uplink and/or downlink transmission time slots" reads right back onto Figure 3 of Vornefeld, which GAS successfully overcame in the IPR:



Ex. 8 (POR) at 26 (citing Petition at 35 and 50). Figure 3 in Vornefeld shows a TDD frame (annotated in green) of 2 ms in length that is comprised of a set of uplink and downlink transmission time slots, which are shown in Vornefeld as the "uplink phase" and "downlink phase" of the transmission, respectively. The "second downlink data" (shown in red) in Vornefeld is undeniably transmitted in the same "set of uplink and/or downlink transmission

¹⁸ The accuracy of GAS's IPR statements is irrelevant to whether they operate as a disclaimer. See *Huawei Techs. Co. v. T-Mobile US, Inc.*, 2017 WL 4385567, at *3 (E.D. Tex. Sept. 9, 2017) ("Regardless of whether this is factually correct, there is no other way to interpret Huawei's clear statements [in the IPR]") report and recommendation adopted, 2017 WL 4310161 (E.D. Tex. Sept. 28, 2017).

time slots” as the “first downlink data” (shown in blue). Under GAS’s proposed construction, which contains no spatial requirement for the frame, Vornefeld would disclose this limitation. Yet GAS successfully opposed that position in IPR when it argued that the first and second downlink data were *not* in the “same” TDD frame due to their *spatial* separation. GAS is now attempting to do exactly what the doctrine of prosecution history disclaimer protects against, namely arguing the meaning of the claims “one way in order to maintain their patentability and in a different way against accused infringers.” *Aylus Networks*, 856 F.3d at 1360.

From a technical perspective, GAS’s proposed construction is also incoherent. Read literally, GAS’s construction would cover a transmission “in said downlink portion of said [set of uplink transmission time slots] . . .” GAS never explains how “a set of uplink transmission time slots” could have a *downlink* portion, nor could a person of ordinary skill in the art understand the scope of this claim so construed with any reasonable certainty.

3. Sprint’s construction is consistent with the “sector” limitations of Claims 28 and 29.

GAS’s primary argument for backtracking on its own reading of claims 28 and 29 in the IPR—the same reading Sprint adopts here—is that it conflicts with the separate claim limitation directed to “sectors.” GAS Br. 26. But GAS was right the first time: there is no conflict.

To be clear, the parties agree that by their plain language, claims 28 and 29 require that the first and second downlink data be *transmitted to* wireless access devices in different sectors:

28. The transceiver as set forth in claim 1 wherein said transmit path circuitry *transmits*, in said downlink portion of said TDD frame, second downlink data traffic *to substantially only wireless access devices within an other of said sectors* using an other of said directed scanning beam signals.

‘931 patent at 33:4-9; *see also id.* at 34:1-6 (claim 29 requiring “transmitting . . . to substantially only wireless access devices in a second of said sectors”). Sprint’s construction does not alter the claims’ requirement that the destination for these transmissions must be “an other of said

sectors”/ “a second of said sectors.” That remains true whether or not the TDD frame itself is defined by reference only to time as GAS now proposes, or by reference to time and space as the Board and Federal Circuit have held. Instead, Sprint’s construction focuses on the vehicle by which those transmissions to other sectors occur—that is, the separately claimed TDD frame in which the data traffic is transmitted.

GAS’s other arguments also fail. Regardless of any statements Sprint made in the IPR with respect to claims 28 and 29, the doctrine of prosecution history disclaimer is based on the *patentee’s* statements made to obtain a patent. *See Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1381 (Fed. Cir. 2011) (“The patentee is bound by representations made and actions that were taken in order to obtain the patent.”). The Board and the Federal Circuit agreed with GAS that “said TDD frame” imposes both a time and spatial requirement, even applying the broadest reasonable interpretation. That broadest reasonable interpretation “cannot be narrower than” the proper construction adopted by the Court here under *Phillips*. *See Facebook, Inc. v. Pragmatus AV, LLC*, 582 F. App’x 864, 869 (Fed. Cir. 2014).

While GAS points to the specification of the ’931 patent to support its new broader construction eliminating the spatial requirement, GAS Br. 26 & 29, GAS cannot recapture claim scope that it clearly and unmistakably disclaimed in the IPR.¹⁹ *See Ramot at Tel Aviv Univ. Ltd. v. Cisco Sys., Inc.*, No. 2:19-CV-00225-JRG, 2020 WL 2517581, at *14 (E.D. Tex. May 15, 2020) (adopting “a narrower meaning” than the plain and ordinary meaning because of the plaintiff’s “representation to the PTAB in IPR”). GAS also resorts to extrinsic dictionaries to

¹⁹ GAS quotes a single sentence from the specification that states “[i]n TDD, a single channel is used for transmission and reception and specific periods of time (i.e., slots) are allocated for transmission and other specific periods of time are allocated for reception.” ’931 patent at 6:2-5. Yet this general description of TDD says nothing about what is necessary to transmit multiple downlink transmissions *in the same TDD frame*.

support its alleged “plain meaning” construction of “TDD frame.” GAS Br. 28. Such evidence cannot overcome the IPR record either. *See P & RO Sols. Grp., Inc. v. CiM Maint., Inc.*, 273 F. Supp. 3d 699, 703 (E.D. Tex. 2017) (“Generally, extrinsic evidence is ‘less reliable than the patent and its prosecution history in determining how to read claim terms.’”) (quoting *Phillips*, 415 F.3d at 1318).

III. CONCLUSION

For these reasons, Sprint requests that the Court adopt its proposed constructions.²⁰

²⁰ GAS and Sprint previously agreed in the Joint Claim Construction Statement (Dkt. 73 at 1) on a construction for the term “**first beam map containing scanning beam information usable by said wireless access devices to detect [receive] said [first] directed scanning beam signal[s]**” in claims 2, 11, and 20. However, GAS has since advocated for a different construction of this term, as well as for construing its constituent phrases “a first beam map” and “scanning beam information . . .” separately. Sprint is amenable to the substantive language now proposed by GAS, but consistent with the PTAB’s treatment of the phrase as a whole (*see* Ex. 12, FWD at 14-15), and for the jury’s ease of reference, the entire claim limitation should be construed holistically. That is, the limitation “**first beam map containing scanning beam information usable by said wireless access devices to detect [receive] said [first] directed scanning beam signal[s]**” in claims 2, 11, and 20 should be construed as “*scheduling information for one or more beams containing any information that is usable by said wireless access devices to detect said directed scanning beam signals.*” (The italicized portions are GAS’s proposed constructions for the terms in bold.) Sprint proposed this holistic construction to GAS prior to the filing of this brief; GAS did not agree.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to the Federal Rules of Civil Procedure and Local Rule CV-5, I hereby certify that a copy of the foregoing document and accompanying exhibits were filed via the Court's CM/ECF system on August 12, 2020, which will send a notification of such filing to all counsel of record.

/s/ Jason W. Cook

Jason W. Cook